A Framework for the Automatic Description of Healthcare Processes in Natural Language: Application in an Aortic Stenosis Integrated Care Process *

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Abstract. We present a summary of the work *A framework for the automatic description of healthcare processes in natural language: Application in an aortic stenosis care process* originally published in the *Journal of Biomedical Informatics*. We present a framework for the automatic generation of natural language descriptions of healthcare processes, with a specific application in the field of cardiology. The framework is based on the most widely used architecture for Data-to-Text systems and supported by a model capable of handling and reasoning with process data. It is able to quantify process features over time, extract temporal relations among activities and suggest possible causes, and compare features between groups of patients, among other features. The framework integrates fuzzy quantification techniques to represent quantitative process data and describe it in natural language using imprecise terms. A real-world application in the Aortic Stenosis Integrated Care Process of the University Clinical Hospital of Santiago de Compostela has been validated by fifteen cardiology experts, with very positive results. The findings suggest that natural language is the most efficient modality for conveying information to medical professionals, and that natural language descriptions provide relevant and useful information about the process.

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